

**DYNAMIC ENVIRONMENTAL
SYSTEMS, INC.**

MARWAN M. SADAT, PhD, PE

ENVIRONMENTAL ENGINEERS
AND PLANNERS

September 13, 1986

Donald K. Joseph, Esquire
Wolf, Block, Schorr and Solis-Cohen
Packard Building-12th Fl.
Philadelphia, PA 19102

Re: Tyson Dump

Dear Mr. Joseph:

For nearly four years ending in May, 1986, I was in charge of administrating New Jersey's Spill Fund and the state's involvement in the Federal Superfund program. During this time, I reported directly to the Commissioner and Deputy Commissioner of New Jersey's Department of Environmental Protection. Authority for administering these programs was by administrative order, delegated directly to me.

I have reviewed the material that you have provided me with and that deals with the proposed remedial actions at the Tyson Dump. I have examined the remedial investigation, the feasibility study, the Focused Feasibility Study, the risk assessment, as well as some of the comments which were given to EPA by consultants to the responsible parties. In what follows, I will summarize conclusions which I have reached after reviewing the material indicated above.

In general, I have found the quality of the data which was acquired by the EPA consultant during the remedial investigation to be less than satisfactory for all but gross decisions. Many of the analyses indicated cross-contamination of field blanks and some of the replicate analyses did not give results in the remedial investigation which were similar. Furthermore, the number of wells in the remedial investigation which

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were used to characterize the geo-hydrology of the site is not sufficient nor were there enough wells in the bedrock aquifer to properly estimate the magnitude of the bedrock aquifer contamination.

The remedial measure which is being proposed by the Focused Feasibility Study is, in my opinion, premature and not based on good engineering practice, nor is it based on a realistic risk assessment.

The risk assessment performed by I.C.F. Clement and the Focused Feasibility Study developed action levels based on four different scenarios. The first being an action level assuming that contaminated water is ingested at the Schuylkill River--the point of discharge. The second would be based on ingestion of contaminated water at a public supply intake also on the same river. The third would be drinking contaminated water at the boundary of the site. And, finally, the fourth is drinking contaminated water on the site itself. EPA has chosen to use drinking water at the site as the action scenario.

Use of the third and fourth scenarios are inappropriate. No one in a responsible, official position would allow resumption of the use of an aquifer which has received such an input of contaminants. It would certainly be inappropriate for any state or federal agency to permit installation of either a public or a private well on that property, even after all remedial measures had been implemented. In New Jersey, in a number of cases where there was suspected groundwater contamination and where extensive groundwater decontamination programs have been instituted, the affected population was immediately switched to a public water supply which would not draw potentially contaminated water from an affected area. I understand that there are no known wells contaminated, and, therefore, no need for this switch to public water at this site.

In addition, use of the action levels of less than 100 ppb are inappropriate for another reason. While water sampling accuracy may reach levels of 100 ppb or even less, the present technology does not allow for reliable measurements of action levels in a soils matrix at these levels.

Furthermore, there was no quantitative cost analysis done of action levels versus cost. This is

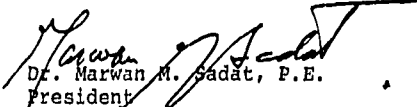
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and should be standard operating procedure before expenditures in the tens of millions of dollars. Because of the shortness of time, I was unable to make such estimates for you. However, use of the original determination of clean-up to background as well as the action receptors used in the Focused Feasibility Study is inappropriate as not being cost-effective.

I have further examined the report that was prepared by Stan Feenstra and John Cherry entitled "Subsurface Contamination by Dense Non-Aqueous Phase Liquid (DNAPL) Chemicals at Tyson's Site, Montgomery County, Pennsylvania". Since I just received the report, for these purposes, I assume their computations to be correct. If so, I concur in principle with the finding of the report which indicates that, because of the potential for extensive contamination of the fractured bedrock aquifer by dense non-aqueous phase liquids (DNAPLs), there is a need for an extensive investigatory program to clearly delineate the extent of the contamination and develop appropriate remedies. If Dr. Cherry's conclusions are correct, then the removal of the contaminated soil from the lagoon areas is, at this point, premature and not cost-effective.

Once a full investigation of the extent of the contamination by 1,2,3-trichloropropane of the fractured bedrock aquifer has been completed then these figures can be used to develop an appropriate cost-effective remedy for the site. Until the groundwater investigation is complete, there is no need to remove any contaminated soil from the Tyson Dump.


Dr. Marwan M. Sadat, P.E.
President

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VITAE

Marwan M. Sadat, Ph.D., P.E.
416 Clarksville Road
Princeton Junction, NJ 08550

PROFESSIONAL EXPERIENCE

DYNAMIC ENVIRONMENTAL SYSTEMS, INC. (June, 1986 to Present)
President and Chairman of the Board

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NJDEP) (August 1983 to May, 1986)

Director, Division of Waste Management

As Director, I had total managerial and budgetary responsibility for the management of solid and hazardous wastes in New Jersey. The Division of Waste Management was staffed by 703 engineers and scientists and support staff and had a total budget of \$24 million in fiscal year 1985. This included a variety of program areas such as regulation of hazardous waste generators and transporters, regulation of hazardous waste facilities, emergency response to hazardous spill incidents, and cleanup of New Jersey's hazardous waste sites.

After I assumed this position, the Division of Waste Management implemented the first national hazardous waste cleanup Management Plan and obtained final authorization of RCRA (Resource Conservation and Recovery Act). I also identified legal and programmatic problems associated with the Superfund Program and advocated amendments to the Federal Act to resolve these issues.

I initiated the reorganization of the Division, recognizing increased staffing needs, especially in the areas of enforcement and hazardous site mitigation. Under my direction, technical staff developed the first statewide Land Disposal Regulations and Resource Recovery regulations.

Other accomplishments included: Development of a Quality Assurance/Quality Control Program - to create a uniform method of reporting analytical data resulting in consistent, comparable data to allow accurate verification; and resolution of the "HOW CLEAN IS CLEAN" issue - defined the point at which a hazardous waste site is considered to be "cleaned up" following remedial action and maintenance.

NJDEP (August, 1982 to August, 1983)

Administrator, Hazardous Site Mitigation Administration

After implementation of the National Pollutant Discharge Elimination System (NPDES) for the State of New Jersey, I was given total technical, managerial, and budgetary responsibility for the state's

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Hazardous Site Mitigation Administration in the Waste Management Division. As the Administrator for the State of New Jersey I had the responsibility for the implementation of the State Spill Fund as well as the National Superfund.

NJDEP (October, 1979 to August, 1982)

Administrator, Water Quality Management Element

Total managerial responsibility for Water Quality Management for the State of New Jersey. The Water Quality Management Element had a staff of 110 persons. Under my direction, the Element developed the first comprehensive water quality management program for the State of New Jersey including surface and ground waters and management of hazardous waste facilities. Major accomplishments in this position were: 1) The project management team concept for the development of the first comprehensive statewide consolidated water pollution regulations. 2) The organization and staffing of the Water Quality Management Element in a period of less than 15 months. 3) The preparation and award of a federal grant of \$8 million for the development of a comprehensive Pretreatment/Hazardous Waste Disposal Statewide Plan. 4) Project Officer for the Camden Composting project. This \$1.1 million research project involved 50 scientists and engineers from Rutgers, The State University, and was the first comprehensive study of sewage sludge composting.

NJDEP (February, 1977 to October, 1979)

Program Director, Office of Sludge Management and Industrial Pretreatment

Total managerial responsibility for the Office of Sludge Management and Industrial Pretreatment. The technical staff of the Office under my supervision planned and designed the Division of Water Resources' Wastewater Management Information Computer System. Allowed the Office to establish itself as an effective and highly professional group within the DEP dealing with the ocean dumping issue for New Jersey.

NJDEP (November, 1975 to February, 1977)

Supervising Environmental Engineer

Supervisory responsibility for the Delaware Basin technical staff of the Public Wastewater Facilities Element. Supervisory responsibility for staff reviews of federal grant applications for wastewater treatment works and of Facilities Planning Studies for conformance with the requirements of the Federal Clean Water Act and the National Environmental Policy Act (NEPA) of 1969. Project management of federal grants for the design and construction of water pollution control works.

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RESEARCH-COTTRELL, INC. (1973-1975)

Cooling Tower Division

Manager, Engineering. Managerial and budgetary responsibility for engineering staff involved in the design and construction of natural draft and mechanical draft cooling towers. Precontract responsibility for optimum tower selection and technical sales support. Preparation of environmental assessment of cooling tower drift and impact of cooling tower blowdown and thermal discharge on receiving stream water quality. Coordination of cooling tower research program with Princeton University. In charge of continuing development effort of cooling tower optimization program. Design of twin cooling towers for Pennsylvania Power and Light for the Susquehanna Nuclear Station (550 feet high.) These towers are the largest hyperbolic cooling towers ever designed and constructed. Winner, first prize, 1974 CRSI award for design excellence for Atlantic City Electric Company cooling tower, the first salt water concrete cooling tower in the world.

WIDENER UNIVERSITY (1968-1973)

Assistant Professor of Engineering

SCI-TEK COMPUTER CENTER (1966-1967)

Manager, Engineering Programming. Managerial and budgetary responsibility for the development of major computer programs for civil and fluid dynamics applications.

NOLEN-SWINBURN AND ASSOCIATES (1966-1967)

Architects

Associate and manager in charge of the Systems Division.

INTERPACT CORPORATION (1961-1965)

Assistant Manager - Technical Services.

MUNICIPALITY OF DAMASCUS (1960-1961)

Damascus, Syria

Design Engineer - layout and design of the Barada Interceptor System

INTERPACE CORPORATION (1959-1960)

Assistant Production Engineering

AWARDS

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U.S. Environmental Protection Agency:

Exemplary support during an environmental emergency May 1979
presented by Governor Byrne

NSF Fellow -Rutgers University 1968-1969

Member Chi Epsilon Honor Society

Engineer of the Year (1986)/ Engineering News Record Award

EDUCATION

Rutgers University, New Brunswick, NJ, Ph.D., January, 1971

MSC - NJIT, 1965

BSCE - Robert College, Istanbul, Turkey, 1959

SPECIALIZED TRAINING

1972 - MIT Post Doctoral Summer Program in Finite Element Techniques

1973 - NASA Sponsored summer Post Doctoral program on Mathematical
Foundation of Finite Element Theory at George Washington
University and Langley NASA Center

PROFESSIONAL SOCIETIES

Member-American Society of Civil Engineers

AAAS

National Society of Professional Engineers

Water Pollution Control Federation

PUBLICATIONS

A Hydrological Approach to Infiltration/Inflow, Water Pollution
Control Federation - Atlantic City, 1976

Alternative to Offshore Dumping - Present Status, Man and the Sea,
Center for Marine Studies, Temple University, 1980

New Jersey Sludge Strategy, National Conference on Design of
Municipal Sludge Compost Facilities - Hazardous Materials Control
Research Institute, U.S. Department of Agriculture, 1978.

Impact of Industrial Pretreatment on the Heavy Metals in the New York
Bight, Pollution and Water Resources, Columbia University Seminar
Series, Vol. XII, Part 3, 1980 (G. J. Halasi-Kun, Ed.).

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Approach Toward Establishing Interim Hazardous Waste Cleanup Criteria, Proceedings, National Conference on Management of Uncontrolled Hazardous Waste Sites, 1983.

Management Plan for Hazardous Waste Site Cleanups in New Jersey, Ibid., 1983.

Soil Detoxification Method: State of the Art Review, Proceedings, Sixteenth Mid Atlantic Industrial Waste Conference, 1984.

PROFESSIONAL REGISTRATION

Registered Professional Engineer in New Jersey, Pennsylvania, and Florida

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